

**REMARKS**

Reconsideration of the application, as amended, is respectfully requested.

**I. STATUS OF CLAIMS**

Claims 1-25 are pending in this application. Claims 1, 6 and 22 have been amended herewith to more particularly point out and distinctly claim that which applicants regard as their invention. Moreover, claims 14-21 and 24-25 have been cancelled without prejudice.

Support for the above amendments may be found throughout the specification as originally filed. It is respectfully submitted that no new matter has been added by virtue of this amendment.

**II. 35 U.S.C. 102(e) REJECTIONS**

**Claims 1, 2, 4, 5, 7, 11 12, 13, 22 and 23 have been rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,927,410 to Chen (“the Chen patent”).**

In response, it is submitted that the Chen patent fails to teach or suggest all of the features recited in claims 1 and 22.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. (See MPEP 2131; **Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)**).

In particular, Chen at the very least fails to teach or suggest a multi-bit phase change memory cell (claim 1) or a multi-bit phase change memory (claim 22), wherein each of said plurality of phase change material layers has a different height from one another, as recited in claims 1 and 22 of the presently claimed invention. Although Chen describes a phase changing memory device that includes programmable memory material disposed between a pair of electrodes, Chen still fails to teach or suggest each of the plurality of phase change material

layers having a different height from one another. Rather, Chen is completely silent regarding differing heights for its phase change material layers. At best, Chen illustrates phase change material layers 22 each having the same height as one another. (See Fig. 3 of the Chen reference). Therefore, Chen fails to teach or suggest all of the features recited in claims 1 and 22 and thus fails to anticipate these claims.

Withdrawal of the rejection to claims 1 and 22 is respectfully requested. As claims 2-13 depend from and incorporate all of the limitations of claim 1 and claim 23 depends from and incorporates all of the limitations of claim 22, withdrawal of the rejection to these dependent claims is likewise requested.

### **III. 35 U.S.C. 103(a) REJECTIONS**

- (i) Claims 3, 6, 9, and 10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as discussed above, in view of U.S. Patent No. 5,536,947 to Klersy et al. (“the Klersy patent”).
- (ii) Claim 8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as discussed above, in view of U.S. Patent Application Publication No. 2004/0178401 to Ovshinsky et al. (“the Ovshinsky publication”).

In response, it is submitted that the combination of Chen, Klersy and Ovshinsky fails to teach or suggest all of the features recited in claims 1 and 22.

To establish prima facie obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. (See MPEP 2143.03; *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)).

As noted above with regard to claim 1, Chen at the very least fails to teach or suggest a multi-bit phase change memory cell, wherein each of said plurality of phase change material layers has a different height from one another. As claims 3, 6 and 8-10 depend from and

incorporate all of the limitations of claim 1, these dependent claims are likewise patentable over the Chen reference.

Moreover, the Klersy and Ovshinsky references each fail to cure the above deficiency of the Chen patent. Rather, Klersy only describes a single memory material layer 26 wherein the thicknesses of this single layer may be varied. (**See Fig. 1 of the Klersy patent**). However, there is no mention in Klersy regarding a plurality of memory material layers each having differing heights from one another.

Furthermore, Ovshinsky only describes a single chalcogenide material layer 80. (**See Fig. 3 of the Ovshinsky Patent Application Publication**). There is no mention in Ovshinsky, however, regarding a plurality of memory material layers each having differing heights from one another.

Therefore, as with Chen, Klersy and Ovshinsky are likewise each completely silent regarding differing heights for a plurality of phase change material layers. Thus, the combination of Chen, Klersy and Ovshinsky at the very least fails to teach or suggest a multi-bit phase change memory cell, wherein each of said plurality of phase change material layers has a different height from one another, as required by claims 3, 6 and 8-10.

Withdrawal of the rejection to claims 3, 6 and 8-10 is therefore requested.

#### IV. CONCLUSION:

In summary, applicants respectfully submit that the instant application is in condition for allowance. Early notice to that end is earnestly solicited.

If a telephone conference would be of assistance in furthering prosecution of the subject application, applicant requests that the undersigned be contacted at the number below.

Respectfully submitted,



Scott L. Appelbaum  
Reg. No. 41,587  
Attorney for Applicants

F. Chau & Associates, LLC  
130 Woodbury Road  
Woodbury, NY 11797  
Tel: (516) 692-8888  
Fax: (516) 692-8889